WHAT IS CLAIMED IS:

1. A method of troubleshooting an ablation system having at least one patient return electrode, a power control system adapted to output power signals, a computer, and an electrophysiological ("EP") monitoring system, the patient return electrode, computer and EP monitoring system adapted to connect to the power control system at a patient-return-electrode receptacle, a data port and an EP-monitoring-system receptacle respectively, the patient return electrode further adapted to contact biological tissue; said method comprising:

verifying connection between the power control system and the patient return electrode;

verifying adequate contact between the patient return electrode and the biological tissue;

verifying connection between the power control system and the computer;

verifying connection between the power control system and the EP monitoring system; and

after successful verifications, allowing the power control system to output power signals.

2. The method of claim 1 wherein the patient-return-electrode receptacle comprises a switch which, in the absence of an inserted connector, is open and verifying connection between the power control system and the patient return electrode comprises confirming that the switch is closed.

3. The method of claim 2 wherein confirming that the switch is closed comprises:

outputting a test signal to the input of the switch; and

monitoring the output of the switch for the signal.

4. The method of claim 2 further comprising generating an error indication when the switch is open.

5. The method of claim 1 wherein the patient return electrode comprises at least two electrically isolated return pads and verifying adequate contact between the patient return electrode and the biological tissue comprises:

measuring the impedance between the return pads; and

comparing the impedance to an expected value.

6. The method of claim 5 further comprising generating an error indication when the measured impedance is greater than the expected value.

7. The method of claim 1 wherein the patient return electrode comprises at least two electrically isolated return pads and verifying adequate contact between the patient return electrode and the biological tissue comprises:

periodically sampling the impedance between the return pads;

determining an average impedance based on the sequence of measured impedances;

calculating the standard deviation of the impedance values relative to the average value; and

generating an error indication when the standard deviation is high.

8. The method of claim 1 wherein the data port comprises a switch which, in the absence of an inserted connector, is open and verifying connection between the power control system and the computer comprises confirming that the switch is closed.

9. The method of claim 8 wherein confirming that the switch is closed comprises:

outputting a test signal to the input of the switch; and

monitoring the output of the switch for the signal.

10. The method of claim 8 further comprising generating an error indication when the switch is open.

11. The method of claim 8 wherein verifying connection between the power control system and the computer further comprises establishing communication between the power control system and the computer.

12. The method of claim 11 wherein establishing communication between the power control system and the computer comprises polling the computer and waiting for an answer.

13. The method of claim 12 further comprising verifying the presence of appropriate software in the computer.

14. The method of claim 12 further comprising generating an error indication if an answer is not received.

15. The method of claim 1 wherein the power control system has a multiple pin EP-monitoring-system receptacle and the EP monitoring system comprises an EP recorder having a plurality of inputs and a display for displaying ECG signals and verifying connection between the power control system and the EP monitoring system comprises:

outputting a signal to each of the EP- monitoring-system receptacle pins in sequence; and

monitoring the EP recorder display for receipt of each signal in sequence.

16. The method of claim 15 wherein each of the signals is a pulse signal having substantially the same amplitude and verifying connection between the power control system and the EP monitoring system further comprises calibrating the EP monitoring system in accordance with the amplitude.

17. The method of claim 1 further comprising initiating the verifications.

18. The method of claim 17 wherein the power control system further comprises a catheter receptacle and initiating the verifications comprises inserting a catheter connector into the catheter receptacle.

19. The method of claim 1 wherein the verifications are performed in sequence.

20. An ablation system comprising:

a power control system having a patient-return-electrode receptacle, a data port and an electrophysiological (EP) monitoring system receptacle, the power control system adapted to output power signals;

a patient return electrode adapted to connect to the patient-return-electrode receptacle;

a computer adapted to connect to the data port;

an EP monitoring system adapted to connect to the EP-monitoring-system receptacle; and

a processor programmed to:

verify connection between the power control system and the patient return electrode;

verify adequate contact between the patient return electrode and the biological tissue;

verify connection between the power control system and the computer;

verify connection between the power control system and the EP monitoring system; and

after successful verifications, allow the power control system to output power signals.

21. The ablation system of claim 20 wherein the patient-return-electrode receptacle comprises a switch which, in the absence of an inserted connector, is open and the processor verifies connection between the power control system and the patient return electrode by being further adapted to:

output a test signal to the input of the switch; and

monitor the output of the switch for the signal.

22. The ablation system of claim 21 wherein the processor is further adapted to generate an error indication when the switch is open.

23. The ablation system of claim 20 wherein the patient return electrode comprises at least two electrically isolated return pads and the processor verifies adequate contact between the patient return electrode and the biological tissue by being further adapted to:

measure the impedance between the return pads; and
compare the impedance to an expected value.

24. The ablation system of claim 23 wherein the processor is further adapted to generate an error indication when the measured impedance is greater than the expected value.

25. The ablation system of claim 20 wherein the patient return electrode comprises at least two electrically isolated return pads and the processor verifies adequate contact between the patient return electrode and the biological tissue by being further adapted to:

periodically sample the impedance between the return pads;
determine an average impedance based on the sequence of measured impedances;
calculate the standard deviation of the impedance values relative to the average value; and
generate an error indication when the standard deviation is high.

26. The ablation system of claim 20 wherein the data port comprises a switch which, in the absence of an inserted connector, is open and the processor verifies connection between the power control system and the computer by being further adapted to:

output a test signal to the input of the switch; and
monitor the output of the switch for the signal.

27. The ablation system of claim 26 wherein the processor is further adapted to generate an error indication when the switch is open.

28. The ablation system of claim 20 wherein the processor verifies connection between the power control system and the computer by being further adapted to poll the computer, wait for an answer and verify the presence of appropriate software in the computer.

29. The ablation system of claim 28 wherein the processor is further adapted to generate an error indication when an answer is not received or the appropriate software is not present.

30. The ablation system of claim 20 wherein the power control system has a multiple pin EP-monitoring-system receptacle and the EP monitoring system comprises an EP recorder having a plurality of inputs and a display for displaying ECG signals and the processor verifies connection between the power control system and the EP monitoring system by being further adapted to:

output a signal to each of the EP-monitoring-system receptacle pins in sequence; and

wait for confirmation that the signals were displayed on the EP recorder display in proper sequence.

31. The ablation system of claim 20 wherein the processor is adapted to begin verification upon receipt of an initiation signal.

32. The ablation system of claim 31 wherein the power control system comprises a switch which when activated provides the initiation signal to the processor.

33. The ablation system of claim 32 wherein the power control system comprises a catheter receptacle and the switch is adapted to be activated upon insertion of a connector in the catheter receptacle.